



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,233	05/06/2005	Teruyuki Fukuda	Q87795	3359
23373	7590	01/02/2008		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER HU, HENRY S	
			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	DELIVERY MODE
			01/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/534,233	Applicant(s) FUKUDA ET AL.	
	Examiner Henry S. Hu	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Election of November 2, 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 3-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☒ Claim(s) 1-5 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Application **10/534,233** is from **371/JP03/14184** with a Japanese priority at November 8, 2002. As pointed out by Examiner, **Applicants still need to confirm the number of independent claims to be “3” since there is only one independent claim (Claim 1) according to USPTO’s Bib Data Sheet** (on the date of December 24, 2007).

This Office Action is in response to **Election** filed on November 2, 2007. **Applicant's election of Group I (Claims 1-2) is without traverse.** No pre-amendment is received so far. **Claims 1-5 with three independent claims** (Claim 1, Claim 3 and Claim 4) are now pending, while non-elected Group II (Claim 3) and Group III (Claims 4-5) are both withdrawn from consideration. An action follows. (see international search report for Applicants' **WO 2004/041880 for the priority paper PCT/JP2003/14184**).

### *Claim Objections*

2. Claim 2 is objected to because of the following informalities:

On **Claim 2** at line 2, recitation of “**a silane group**” may be rewritten to “**a terminal silane group and with the exclusion of hydrosilane**” so as to be consistent with the disclosure on page 5, line 20 to page 6, line 20. Attention is directed to the fact that no hydrosilane is used.

Art Unit: 1796

*Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1796

5. The limitation of parent **Claim 1** in present invention relates to a fluorine-containing polymer for treating a masonry, comprising: (1) a fluoroalkyl group-containing monomer, and (2) a silicon-containing monomer in the amount of 2.0 to 6.0 % by weight based on the polymer.

*See other limitation of dependent Claim 2.*

6. **Claims 1-2 are rejected** under 35 U.S.C. 102(b) as being anticipated by Linert et al. (WO 97/00230).

Regarding “a fluoropolymer for treating a masonry” limitation of parent **Claim 1** and its dependent **Claim 2**, **Linert** has disclosed the preparation of a water-soluble fluoropolymer (a tetrapolymer having four monomers (a)-(d)) comprising the claimed two monomers so as to treat the surface of various porous substrates including masonry type.

To be **specific**, see substrate, line 1-4; page 4, line 20 – page 6, line 18; particularly see the use of two monomers **(a) and (d) in Formula (1)** at page 5, line 17-30; see “masonry” as the porous substrate at page 10, line 5; abstract, line 1-2.

To be **more specific**, monomer (a) is a fluoroalkyl group-containing monomer, while monomer (d) is a compound having trialkoxysilane group and a carbon-carbon double bond. Attention is directed to the fact that open language “**comprising**” is applied to the claimed

Art Unit: 1796

fluoropolymer in parent Claim 1. Therefore, Linert anticipates the limitations of parent Claim 1 and its dependent Claim 2.

7. **Claims 1-2 are rejected** under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over each of four references including Akira et al. (JP 60-147418), Yoshio et al. (JP 64-045411), Toshio et al. (JP 07-109317 with English translation) and Schmidt et al. (US 4,592,930).

Regarding “a fluoropolymer for treating a masonry” limitation of parent **Claim 1** and its dependent **Claim 2**, each of four references including **Akira, Yoshio, Toshio and Schmidt** has individually disclosed the preparation of a fluoropolymer to treat the surface of various substrates so as to enhance antifouling property and weatherability. Open language “**comprising**” has been applied to the monomer composition of the claimed fluoropolymer in parent Claim 1.

8. To be specific, see **Akira** at abstract, line 1-10; particularly see the use of two monomers **(A) and (B) in terpolymer** at pages 118-120. Monomer (A) is a fluoroalkyl group-containing monomer, while monomer (B) is a compound having trialkoxysilane group and a carbon-carbon double bond.

See **Yoshio** at abstract, line 1-7; particularly see the use of two monomers including a specific (meth)acrylic acid ester and a vinyl compound containing alkoxysilyl group at pages 67-

Art Unit: 1796

68. The (meth)acrylic acid ester used by Yoshio is a fluoroalkyl group-containing monomer, while the vinyl compound used by Yoshio is indeed a compound having trialkoxysilane group and a carbon-carbon double bond.

See **Toshio** at abstract, line 1-8; particularly see the use of two monomers including a polyfluoroalkylvinyl monomer and a silicone-based vinyl monomer in a terpolymer at paragraphs 0009-0014. The polyfluoroalkylvinyl monomer used by Toshio is a fluoroalkyl group-containing monomer, while the silicone-based vinyl monomer used by Toshio is indeed a compound having trialkoxysilane group and a carbon-carbon double bond.

See **Schmidt** at abstract, line 1-6; particularly see the use of two monomers including a  $R_F$ -containing monomer in a tetrapolymer at column 3, line 7-26 and a silane-based vinyl coupling agent as a substrate pre-treatment monomer at column 5, line 50-62. The  $R_F$ -containing monomer used by Schmidt is a fluoroalkyl group-containing monomer, while the silane-based vinyl coupling agent used by Schmidt is indeed a compound having trialkoxysilane group and a carbon-carbon double bond. The tetrapolymer and the coupling agent will certainly become a polymeric product after coupling reaction.

9. Each of **four** references including Akira, Yoshio, Toshio and Schmidt is therefore **silent of applying such a fluoropolymer on a specific substrate such as masonry**. In light of the fact that the prior art and the present invention recite **substantially identical fluoropolymer**

Art Unit: 1796

comprising fundamentally the same or similar two monomers including a fluoroalkyl group-containing monomer and a silane group-containing monomer, a reasonable basis exists to believe that such a fluoropolymer of the invention inherently possess the same application such as applying on a specific substrate including masonry. Since PTO does not have proper means to conduct experiments, the burden of proof is now shifted to Applicants to show otherwise. *In re Best*, 195 USPQ 430 (CCPA 1977).

It has been held that where applicant claims a composition in terms of function, property or characteristic where said function is not explicitly shown by the reference and where the examiner has explained why the function, property or characteristic is considered inherent in the prior art, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Fitzgerald et al.*, 205 USPQ 594, 596 (CCPA 1980).

10. **Claims 1-2 are rejected** under 35 U.S.C. 103(a) as obvious over Akira et al. (JP 60-147418), Yoshio et al. (JP 64-045411), Toshio et al. (JP 07-109317 with English translation) or Schmidt et al. (US 4,592,930), each individually in view of Linert et al. (WO 97/00230).

The discussion of the disclosures of the prior art of Linert for Claims 1-2 of this office action is incorporated here by reference. The discussion of the disclosures of the prior art of Akira, Yoshio, Toshio and Schmidt for Claims 1-2 of this office action is also incorporated here by reference. Each of four references including Akira, Yoshio, Toshio and Schmidt is only **silent of applying such a fluoropolymer on a specific substrate such as masonry.**



Art Unit: 1796

11. **Linert has taught such a subject matter.** Linert has disclosed the preparation of a **water-soluble fluoropolymer** (a tetrapolymer having four monomers (a)-(d)) comprising the claimed two monomers so as to treat the surface of various porous substrates including **masonry** type. To be **specific**, see substrate, line 1-4; page 4, line 20 – page 6, line 18; particularly see the use of two monomers **(a) and (d) in Formula (1)** at page 5, line 17-30; see “masonry” as the porous substrate at page 10, line 5; abstract, line 1-2. By doing so, substrates treated with these fluoropolymers are thereby durably protected from rain and normal weathering (see abstract in the end lines).

12. In light of the fact that similar copolymers have been used by the involved references and they are for the same or similar substrate protection purpose, one having ordinary skill in the art would therefore have found it obvious to modify Akira, Yoshio, Toshio or Schmidt’s process of using on masonry substrate as taught by Linert. By doing so, one would expect that all species in the same genus (substrate) would succeed based on functional equivalence and interchangeability. Additionally, more diversified and durable product can be thereby obtained.

### *Conclusion*

13. The prior art made of record and not relied upon is considered pertinent to applicants’ disclosure. The following references relate to a fluorine-containing polymer (to be useful for

Art Unit: 1796

treating a masonry) comprising a fluoroalkyl group-containing monomer and a silicon-containing monomer as specified:

US 4,366,300 to Delescluse only discloses using a liquid composition for the protection of materials against contaminations, spots and stains. The composition comprises a fluororesin (a copolymer) based on a fluorinated acrylic or methacrylic monomer. See abstract, line 1-7; column 4, line 13 – column 5, line 49; particularly see formula III, IV and V. However, silane-containing monomer is NOT included in the copolymer at all. Therefore, Delescluse fails to teach or fairly suggest Claim 1 of present invention.


14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The fax number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

Art Unit: 1796

Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter D. Mulcahy/  
Peter D. Mulcahy  
Primary Examiner  
Art Unit 1796



Henry S. Hu

Patent Examiner, Art Unit 1796, USPTO

December 24, 2007